

Now or Later - The "Recency/Primary" Effect

Here is a memory experiment that requires a group of subjects to test. Get 5 or more friends to serve as your experimental subjects. Tell them that you will read a list of 20 words and that their job is to remember as many of the words as possible. Read the following list of 20 words at a rate of 1 word every second. Ask your subjects to write down the words that they can remember immediately after you finish reading the list.

Here is the list of words:

cat apple ball tree square head house door box car
king hammer milk fish book tape arrow flower key shoe

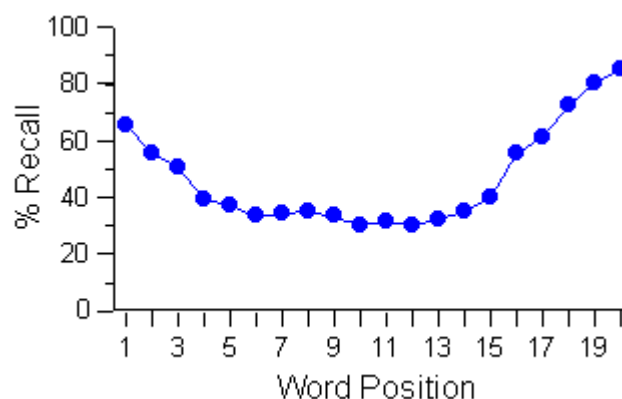


Now analyze the results of your memory study. You can collect the lists of words that your subjects wrote or you can just ask them which words that they remembered.

1. Find out if there was better recall of any particular words on your list.
2. Was there better recall of words that were read first or last?

To do this assign a "position" to each word that you read. So, "cat" was word #1, apple was word #2, ball was word #3,....,shoe was word #20. Calculate the percent of recall for each word. For example, if you had 10 subjects and 7 of them remembered the word "cat", then "cat" (word #1) had a percent recall of **70%**. Calculate the percent of recall for each of the 20 words.

Now plot your results: the X-axis will be word position and the Y-axis will be % recall. Do you see a pattern? Does it look anything at all like this figure?:

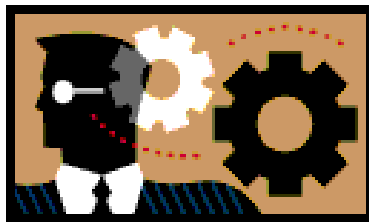


The results of this kind of experiment usually result in a graph similar to this one. (This kind of graph is called a **"serial-position curve"**). Words read first and words read last are remembered better than words read in the middle of a list.

This type of experiment provides evidence that there are 2 types of memory processes. It is thought that memory is good for the words read last because they are still in short term memory - this is the **recency effect**. Memory is good for the words read first because they made it into long term memory - this is the **primacy effect**.

It is also possible that some words in the list were very easy to recall for other reasons. For example, if your teacher just dropped a hammer on his or her toe, then everyone may find that the word "hammer" was easy to remember. Or perhaps, the last name of someone in the group of subjects is "King", then everyone would remember the word "king".

You can try this experiment again with a slight twist. Ask a new set of subjects to remember the same set of words. However, immediately after you finish reading the list, DISTRACT your subjects by having them count backwards from 100 by threes (100, 97, 94, 91, etc) for about 15-30 seconds. Plot your serial position curve again. Do you see any changes? Usually, distraction causes people to forget the words at the end of the list. Did it happen to your subjects?



Concrete Words, Abstract Words and Just Plain Nonsense

The ability to recall a word depends on how meaningful the word is to a person. Along with the meaningfulness of a word, the "concreteness" of a word is important for memory. Concreteness refers the ability of a word to form a mental image. A word with high concreteness is easy to "see"; a word with low concreteness (an "abstract" word) is difficult to visualize.

Here are three lists of words: concrete words, abstract words and nonsense words. See which list is easier to memorize. You could also read these lists to other people to see how many words from each list they remember.

Concrete Words		Abstract Words		Nonsense Words	
alligator	hammer	anger	honor	ator	leptav
apple	house	belief	hope	botam	lumal
arrow	lemon	boredom	idea	crov	mib
baby	microscope	chance	interest	difim	natpem
bird	ocean	concept	knowledge	firap	peyrim
book	pencil	effort	mercy	glimoc	rispaw
butterfly	rock	fate	mood	gricul	stiwini
car	shoes	freedom	moral	hilnim	tubiv
corn	table	glory	theory	jolib	vopec
flower	window	happiness	truth	kepwin	yapib

The concrete words and abstract words were scored as having high and low concreteness, respectively, in a paper by A. Paivio, J.C. Yuille and S.A. Madigan, Concreteness, imagery, and meaningfulness values for 925 nouns, *Journal of Experimental Psychology*, Monograph Suppl., vol. 76, no.1, part 2, pages 1-25, 1968.



Technique 2: Chain It! - Chaining

Chaining is a form of visualizing, but now you might have to remember several items in order. This time you must link the items together by thinking of images that connect them. While a grocery list does not necessarily have to be remembered in order (although it sometimes helps to find things faster), let's use it as an example: milk, bread, eggs, cheese, orange juice. Now, chain them with images:

1. A carton of milk pouring onto bread.
2. A sandwich (the bread) with raw eggs on it.
3. Eggs stuck in the holes of a Swiss cheese.
4. Pieces of cheese hanging from an orange tree.

TRY IT!

Here is a bigger list of words to try:

shoe - piano - tree - pencil - bird - bus - book - dog - pizza - flower - basketball
- door - TV - rabbit - spoon - eye - chair - house - computer - rock

You may find that bizarre and wild associations are easy to remember. Here is an example of chaining for the first three words (shoe - piano - tree) of this list.



Technique 5: Acrostic It! - Those Catchy Phrases

An acrostic is a phrase that uses the first letter of a word to remember it. In neuroanatomy, one of the most familiar ones is:

On Old Olympus Towering Top A Famous Vocal German Viewed Some Hops.

"What does this mean", you ask. Well, the first letters of each of these words in this little phrase stand for the first letters of each of the [cranial nerves](#), in order:

o^lfactory nerve (I), o^optic nerve (II), o^oculomotor nerve (III), t^rochlear nerve (IV), t^rigeminal nerve (V), a^bducens nerve (VI), f^acial nerve (VII), v^estibulocochlear (VIII), g^lossopharyngeal nerve (IX), v^agus nerve (X), s^pinal accessory nerve (XI), h^ypoglossal nerve (XII).

Here's another one:

My Very Early Morning Jam Sandwich Usually Nauseates People
OR
My Very Excellent Mom Just Served Us Nine Pizzas

These two phrases represent the order of planets from the Sun:
Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, Pluto

One last one...do you know the order of colors in a rainbow? Just remember this person's name: Roy G. Biv

R=red; O=orange Y=yellow
G=green
B=blue; I=indigo V=violet

